Incoming
C0070039
#3946
OK

Canyon Fuel Company, LLC
Dugout Canyon Mine
P.O. Box 1029
Wellington, Utah 84542

October 21, 2011

Coal Regulatory Program
Utah Division of Oil, Gas and Mining
1594 West North Temple, Suite 1210
Salt Lake City, UT 84114-5801

RE: Revision to Chapter 7 of M&RP to Address Changes in Water Monitoring, Dugout Canyon Mine, Canyon Fuel Company, LLC, C/007/039, Carbon County, Utah

Dear Sirs:

Attached please find five copies of revisions to the water monitoring requirements in Chapter 7 of the M&RP. We are requesting to eliminate sampling of several springs, one surface water monitoring location and a monitoring well. The reasons have been discussed within the text provided. In addition the "Hydrologic Monitoring" drawing has been revised.

If you have any questions please call me at (435) 636-2869.

Sincerely yours,

Vicky S. Miller

Vicky S. Miller

cc: Dave Spillman

File in:
☐ Confidential
☐ Shelf
☒ Expandable
Date Folder 10251 C/0070039
Incoming

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OCT 25 2011
DIV. OF OIL, GAS & MINING

APPLICATION FOR COAL PERMIT PROCESSING

Permit Change ☒ New Permit ☐ Renewal ☐ Exploration ☐ Bond Release ☐ Transfer ☐

Permittee: Canyon Fuel Company, LLC
Mine: Dugout Canyon Mine **Permit Number:** C/007/039
Title: Revisions to Chapter 7 of the M&RP to Address Changes in Water Monitoring
Description, Include reason for application and timing required to implement:

Instructions: If you answer yes to any of the first eight (gray) questions, this application may require Public Notice publication.

☐ Yes ☒ No 1. Change in the size of the Permit Area? Acres: _____ Disturbed Area: _____ ☐ increase ☐ decrease.
☐ Yes ☒ No 2. Is the application submitted as a result of a Division Order? DO# _____
☐ Yes ☒ No 3. Does the application include operations outside a previously identified Cumulative Hydrologic Impact Area?
☐ Yes ☒ No 4. Does the application include operations in hydrologic basins other than as currently approved?
☐ Yes ☒ No 5. Does the application result from cancellation, reduction or increase of insurance or reclamation bond?
☐ Yes ☒ No 6. Does the application require or include public notice publication?
☐ Yes ☒ No 7. Does the application require or include ownership, control, right-of-entry, or compliance information?
☐ Yes ☒ No 8. Is proposed activity within 100 feet of a public road or cemetery or 300 feet of an occupied dwelling?
☐ Yes ☒ No 9. Is the application submitted as a result of a Violation? NOV # _____
☐ Yes ☒ No 10. Is the application submitted as a result of other laws or regulations or policies?
Explain: _____
☐ Yes ☒ No 11. Does the application affect the surface landowner or change the post mining land use?
☐ Yes ☒ No 12. Does the application require or include underground design or mine sequence and timing? (Modification of R2P2)
☐ Yes ☒ No 13. Does the application require or include collection and reporting of any baseline information?
☐ Yes ☒ No 14. Could the application have any effect on wildlife or vegetation outside the current disturbed area?
☐ Yes ☒ No 15. Does the application require or include soil removal, storage or placement?
☐ Yes ☒ No 16. Does the application require or include vegetation monitoring, removal or revegetation activities?
☐ Yes ☒ No 17. Does the application require or include construction, modification, or removal of surface facilities?
☒ Yes ☐ No 18. Does the application require or include water monitoring, sediment or drainage control measures?
☒ Yes ☐ No 19. Does the application require or include certified designs, maps or calculation?
☐ Yes ☒ No 20. Does the application require or include subsidence control or monitoring?
☐ Yes ☒ No 21. Have reclamation costs for bonding been provided?
☐ Yes ☒ No 22. Does the application involve a perennial stream, a stream buffer zone or discharges to a stream?
☐ Yes ☒ No 23. Does the application affect permits issued by other agencies or permits issued to other entities?

Please attach four (4) review copies of the application. If the mine is on or adjacent to Forest Service land please submit five (5) copies, thank you. (These numbers include a copy for the Price Field Office)

I hereby certify that I am a responsible official of the applicant and that the information contained in this application is true and correct to the best of my information and belief in all respects with the laws of Utah in reference to commitments, undertakings, and obligations, herein.

David Spillman
Print Name

David Spillman, Engineering Manager
Sign Name, Position, Date

Subscribed and sworn to before me this 21 day of OCTOBER, 2011

Vicky Sue Miller
Notary Public

My commission Expires: 1-2-2012

Attest: State of UTAH } ss:
County of CARBON

VICKY SUE MILLER
NOTARY PUBLIC-STATE OF UTAH
1776 KENILWORTH RD.
HELPER, UTAH 84526
COMM. EXP. 01-02-2012

For Office Use Only:	Assigned Tracking Number:	Received by Oil, Gas & Mining
		RECEIVED OCT 25 2011 DIV. OF OIL, GAS & MINING

Form DOGM- C1 (Revised March 12, 2002)

APPLICATION FOR COAL PERMIT PROCESSING
Detailed Schedule Of Changes to the Mining And Reclamation Plan

Permittee: Canyon Fuel Company, LLC
Mine: Dugout Canyon Mine **Permit Number:** C/007/039
Title: Revision of Chapter 7 of the M&RP to Address Changes in Water Monitoring

Provide a detailed listing of all changes to the Mining and Reclamation Plan, which is required as a result of this proposed permit application. Individually list all maps and drawings that are added, replaced, or removed from the plan. Include changes to the table of contents, section of the plan, or other information as needed to specifically locate, identify and revise the existing Mining and Reclamation Plan. Include page, section and drawing number as part of the description.

			DESCRIPTION OF MAP, TEXT, OR MATERIAL TO BE CHANGED
☐ Add	☐ Replace	☐ Remove	Chapter 7
☐ Add	☒ Replace	☐ Remove	Section 724.100, Page 7-16
☐ Add	☒ Replace	☐ Remove	Section 731.200, Page 7-52, 53, 57 (see note below)
☐ Add	☒ Replace	☐ Remove	Tables 7-4 and 7-5
☐ Add	☒ Replace	☐ Remove	Plate 7-1, Hydrologic Monitoring Stations
☐ Add	☐ Replace	☐ Remove	
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Any other specific or special instruction required for insertion of this proposal into the Mining and Reclamation Plan.	Received by Oil, Gas & Mining
10/21/11 - These revision are in Chapter 7 of the M&RP. Due to the additional text required to explain the request for removing the monitoring obligation, the pagination will drastically change. Upon final approval we will most likely submit the entire chapter. In addition you will note on revised page 7-57 that two lines of text have been highlighted with yellow, this is text that has been submitted in another amendment for review, but has not yet been approved. We throught we should include it in this amendment, but did not want to assume approval.	RECEIVED OCT 25 2011 DIV. OF OIL, GAS & MINING

CHAPTER 7
HYDROLOGY

aquifer. The absence of springs is of great significance, since this formation is situated between the overlying Flagstaff groundwater system and the underlying coal zone (in the Blackhawk Formation). The absence of springs is most likely the result of two factors: 1) clay horizons in overlying formations inhibit vertical recharge from groundwaters in the Flagstaff and North Horn Formations, and 2) the exposed recharge area of the Price River Formation is limited primarily to areas of steep cliff faces.

Wahler Associates (1982) indicate that monitoring well GW-11-2 (Plate 7-1) is completed within the Price River Formation. Data collected from this well (Appendix 7-4) indicate that water levels varied by approximately 8 feet during the period of December 1979 through November 1982, but showed no consistent trend. A measurement collected in September 1995 indicated that the water level was 1.2 feet lower than the last time it was measured nearly 13 years earlier. Hence, although a slight decline in water levels has occurred during the period of record, this decline is not considered significant. Since 1997, when this well became part of the mine's monitoring program, the water level dropped approximately 8 feet until 2005 when it rose about 12 feet. Mining activities do not appear to be the cause of the rise and fall of the water level within the well nor do cycles between wet and dry periods. The cause for these changes are unknown at this time.

Following the depth reading in monitoring well GW-11-2 on 6/15/06 of 1116' 2", the reading remained at approximately 1116 feet until 10/23/07. When the well was accessed in the Spring of 2008 the measuring probe did not register water and has not registered water since. The assumption is that the GW-11-2 monitoring well caved and/or the casing sheered during the winter months preventing access to measure the water level. Because the water level in the well is inaccessible the well was permanently removed from monitoring after the 4th Quarter of 2011.

Castlegate Sandstone. The Castlegate Sandstone consists of a fine- to medium-grained sandstone that is cemented with clay and calcium carbonate. The outcrops of this sandstone form prominent cliffs in the area.

Data presented in Table 7-2 and Appendix 7-2 indicate that only two springs (SC-80 and SC-81) have been found issuing from the Castlegate Sandstone within the permit and adjacent areas. The flow of these springs was 1 gpm or less in September 1995, with no measurable flow being

200	North Horn
203	North Horn
227	Castlegate Sandstone
259	North Horn
260	Colton
259A	Colton
321	Colton
322	Colton - Operational quarterly flow measurements only
324	Colton - Monitoring begins 3rd Quarter 2008

Locations of these springs are noted on Plate 7-1.

With the addition of 240 acres associated with Federal Coal Lease U-07064-027821, groundwater monitoring location 324 associated with existing water rights identified by an authorized representative of the Conover Trust was added in the third quarter of 2008.

The purpose of monitoring the above-listed springs will be to assess potential impacts to groundwater systems overlying the Blackhawk Formation due to subsidence and mine dewatering. Springs have been selected for monitoring in the Colton, Flagstaff, North Horn, and Castlegate Sandstone Formations. These springs are reasonably accessible and, based on the historical data, are representative of conditions within their respective formations.

The monitoring of springs 321, 322, 200, 227 and 259 was discontinued after the sampling in the 4th quarter of 2011.

- Springs 321 and 322 are outside the area of influence for future mining. Springs 321 and 322 were incorporated into the monitoring program in 2008 when the permit area was expanded, to provide monitoring locations outside the area of influence to establish a baseline. The expanded mine area was sealed in 2010 which eliminated future mining in that area.

- Spring 200 has been monitored since 1999. Between 1999 and September of 2011, the spring has had flow 6 times in 13 years, 1999 had three flows, 2000 had one flow, 2001 had one flow and 2004 had one flow. There has been no flow at Spring 200 since May 2004.

- Spring 227 has been monitored since 1999. Between 1999 and September of 2011, the spring has had flow twice in 13 years, once in 2004 and once in the second quarter of 2011.

- Spring 259 has been monitored since 1999. Between 1999 and September of 2011, the spring has flowed 8 times in 13 years, four times in 1999, twice in 2000 and twice in 2001. Spring 259 has been dry since the samples in 2001.

It should be noted that reliable data have been difficult to collect from the limited number of springs issuing from the Blackhawk Formation within the permit and adjacent areas. As a result, no springs issuing from this formation have been included in the long-term monitoring program.

The ground water monitoring and sampling protocols to be implemented are described in Table 7-4. These protocols are based on the probable hydrologic consequences (PHC) of mining as presented in Section 728 and Appendix 7-3 of this M&RP and the requirements put forth in the Division's regulations. Table 7-4 is the same as that presented in Coal Regulatory Program Directive Tech-004, with the exception that total hardness and total alkalinity are not included. Total hardness, which is primarily of concern in water supplies being developed for domestic use, was not added to the list because summer-home development of the permit area is not an identified post-mining land use. Total alkalinity was not added to the list because the baseline data indicate that acid-generating materials, which may affect the alkalinity of the water, are not present within the permit and adjacent areas.

The protocols set forth in Table 7-4 will be followed during years of normal precipitation as defined in the PHC. Wet or dry (not normal) years for the mine area are defined based on the Natural Resources Conservation Services snow-pack measurements as of March 1 for the Price River-San Rafael River Basin. A wet year occurs when the snow pack water content is greater than 110% of normal and a dry year when the snow pack is less than 70% of normal. After the permit is

materials, which may affect the alkalinity of the water, are not present within the permit and adjacent areas.

- DC-2, DC-3, PC-1a, PC-2, and RC-1 - Quarterly data collection in accordance with Table 7-5. Collection of gain-loss hydrograph data during the first wet year and the first dry year following permit issuance. Wet and dry years will be defined as noted in the previous groundwater monitoring discussion. The hydrograph will be generated by collecting flow measurements during the first wet year and the first dry year on a weekly basis between April 1 and August 31 as conditions permit. Refer to Appendix 7-13 for hydrographs.

- DC-4 and DC-5 - Collection of gain-loss hydrograph data during the first wet year and the first dry year following permit issuance, as described above. Collect flow measurements during the first wet year and the first dry year on a weekly basis between April 1 and August 31 as conditions permit. Samples will also be collected for laboratory analyses during the first wet year and the first dry year following permit issuance. Wet and dry years will be defined as noted above. These samples will be collected during the high-flow and low-flow seasons. The samples will be analyzed for tritium and the operational parameters contained in Table 7-5. Refer to Appendix 7-13 for hydrographs.

- 323 - Quarterly data collection in accordance with Table 7-5. Monitoring site 323 was incorporated into the monitoring program in 2008 when the permit area was expanded, to provide monitoring locations outside the area of influence to establish a baseline. The expanded mine area was sealed off in 2010 eliminating future mining in that area. Sampling of site 323 was discontinued following the 4th quarter of 2011 sampling.

In addition to the above regular monitoring, one water sample will be collected at each sampling point during low flow period every fifth year, during the year preceding re-permitting, to be analyzed for baseline parameters (Table 7-5).

The monitoring requirements proposed herein, including the analytical parameters and the sampling frequency, may be modified in the future in consultation with the Division if the data demonstrate that such a modification is justified. Data will be collected from the sedimentation

TABLE 7-4
Groundwater Monitoring Program
Field and Laboratory Measurement Protocol

Monitoring Wells	Protocol	Comments
GW-10-2	A, 1	Screened in Castlegate Sandstone
GW-11-2	A, 1, D	Screened in Price River Formation
GW-24-1	A, 1	Screened in Castlegate Sandstone
Springs		
SP-20 (S-30)	B, 2, 5	Flagstaff
SC-14	B, 2, 5	North Horn
SC-65	B, 2, 5	Colton
SC-100	B, 2, 5	Flagstaff (at North Horn FM. Contact)
SC-116	B, 3, 5	North Horn
200	B, 3, 5, D	North Horn
203	B, 3, 5	North Horn
227	B, 3, 5, D	Castlegate Sandstone
259	B, 3, 5,D	North Horn
259A	B	Colton
260	B, 3, 5	Colton
MD-1	C, 4	Gilson Seam Workings Discharge
321	B,6, D	Colton
322	B, D	Colton
324	B,6 *	Colton

Protocols

A Monitoring well: quarterly water level measurement only
B Spring: quarterly flow measurements
C Mine Water Discharge, abandoned Gilson Seam workings: quarterly flow measurements
D Discontinued Monitoring after 4th Quarter 2011

Water quality

1 Monitoring well: No quality measurements.
2 Spring: quarterly operational groundwater quality parameters for two years beginning 3rd quarter 1999 after which quarterly field measurements only.
3 Spring: quarterly baseline parameters for three years beginning 1st quarter 1999 after which quarterly field measurements only.
4 Mine water discharge: quarterly operational water quality parameters.
5 During wet or dry years (as described in the PHC, Appendix 7-3), flows will be taken weekly between April 1 and August 31 as conditions permit. Also during the first wet or dry year, one operational laboratory sample and one Tritium sample will be obtained at these sites during high and low flow season.
6 Spring: quarterly operational groundwater quality parameters for two years beginning 3rd quarter 2007 after which field measurements only. * At site 324 quarterly operation ground water quality parameters for two years beginning 3rd quarter of 2008, after which field measurements only.

Groundwater Quality Parameters

FIELD MEASUREMENTS	REPORTED AS
Water Level or Flow	Feet or gpm or cfs
pH	pH units
Specific Conductivity	μs/cm @ 25°C
Temperature	°C

TABLE 7-5

Surface Water Monitoring Program

Field and Laboratory Measurement Protocol

Streams	Protocol	Comments
DC-1	1	Located on Dugout Creek downstream of mine
DC-2	2	Located on Dugout Creek immediately upstream of mine on left-hand fork
DC-3	2	Located on Dugout Creek immediately upstream of mine on right-hand fork
DC-4	3	Located on Dugout Creek upstream of mine on west fork of left-hand fork
DC-5	3	Located on Dugout Creek upstream of mine on east fork of left-hand fork
PC-1a	2	Located on Pace Creek on the eastern edge of State Coal Lease ML 48435-OBA
PC-2	2	Located on Pace Creek on the western edge of State Coal Lease ML 48435-OBA
PC-3	1	Located on Pace Creek in Section 20, T13S R13E
RC-1	2	Located on Rock Creek on the southern edge of State Coal Lease ML 48435-OBA
FAN	1	Located on Pace Creek above fan facilities
323	1, 4	Located in SE1/4,SW1/4,SE1/4 of Section 8, Township T13S, R13E

Protocols

1 Stream: quarterly operational surface water quality measurements analyzed as per parameters listed below.

2 Stream: quarterly operational surface water quality measurements analyzed as per parameters listed below except during first wet or dry years when weekly flow will be obtained from April 1 through August 31, as conditions permit, in addition to quarterly samples.

3 Stream: weekly flow measurements during first wet or dry year will be obtained from April 1 through August 31 as conditions permit. Also during the first wet or dry year, one operational laboratory sample and one tritium sample will be obtained at these sites during high and low flow season.

4 Discontinued Monitoring after 4th Quarter 2011

Surface Water Quality Parameters

FIELD MEASUREMENTS	REPORTED AS
Flow	gpm or cfs
pH	pH units
Specific Conductivity	μs/cm @ 25°C
Dissolved Oxygen	mg/l
Temperature	°C

Laboratory Parameters	Reported As	Operational Monitoring	Baseline Monitoring
Acidity	mg/l		X
Aluminum (Dissolved)	mg/l		X
Ammonia	mg/l		X
Arsenic (Dissolved)	mg/l		X